



PRELIMINARY AMENDMENT

IN THE CLAIMS:

Please amend the claims of this application so as to read as follows:

1. (Original) A method for producing an active matrix organic EL display element by an inkjet method to eject droplets of a liquid via an ejection hole of a nozzle so as to form an organic EL layer, the liquid comprising an organic EL layer material, wherein:

an electrostatic attraction type inkjet apparatus
is used whose ejection hole has a diameter
smaller than a diameter of the droplets; and
the droplets are ejected from the nozzle of the
electrostatic attraction type inkjet apparatus
in such a manner that each of the droplets is
1pl or less in amount.

2. (Original) A method as set forth in Claim 1, wherein:
the liquid has a volumetric concentration
calculated from how many number of layers
is to be formed with the droplets
repeatedly ejected onto a same organic
EL layer formation region.

3. (Original) A method as set forth in Claim 1, wherein:
the liquid has a viscosity of 20cP or more.
4. (Original) A method as set forth in Claim 1, wherein:
the organic EL layer has an organic light emitting layer.
5. (Original) A method as set forth in Claim 1, wherein:
the organic EL layer has a charge transport layer.
6. (Currently Amended) A method for producing an active matrix
organic EL display element by an inkjet method to eject
droplets of a liquid via an ejection hole of a nozzle so
as to form an organic EL layer, the liquid comprising an
organic EL layer material, wherein:
an electrostatic attraction type inkjet apparatus
is used, the electrostatic attraction type
inkjet apparatus having an ejection hole
having a diameter smaller than a diameter
of the droplets, and being for ejecting droplets
via its nozzle in such a manner that, each of
the droplets is 1pl or less in amount; and

the liquid has a volumetric concentration η (%) that is substantially $\beta \times t/(\alpha \times D)$, where α is a number of layers to be formed with the droplets repeatedly ejected on a same organic EL layer formation region, β is a value obtained from a ratio between the diameter of the droplets and a diameter of landed droplets in the organic EL layer formation region, D is the diameter of the droplets, and t is a thickness of the organic EL layer to be formed.

7. (Original) A method as set forth in Claim 6, wherein:
the ejection hole of the electrostatic attraction type inkjet apparatus is smaller than the droplet in diameter.
8. (Original) A method as set forth in Claim 6, wherein:
the liquid has a viscosity of 20cP or more.
9. (Original) A method as set forth in Claim 6, wherein:
the organic EL layer has an organic light emitting layer.

10. (Previously Presented) A method as set forth in Claim 1, wherein:
the organic EL layer has a charge transport layer.
11. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claims 1.
12. (Original) An apparatus for producing an active matrix organic EL
display element, the apparatus adopting an inkjet method
to eject droplets of a liquid via an ejection hole of a nozzle
so as to form an organic EL layer, and the liquid comprising
an organic EL layer material, wherein:
the ejection hole of the nozzle has a diameter
smaller than a diameter of the droplets, the
inkjet method is of electrostatic attraction
type, and each of the droplets ejected via
the nozzle is 1pl or less in amount.

13. (Currently Amended) An apparatus for producing an active matrix organic EL display element, the apparatus adopting an inkjet method to eject droplets of a liquid via an ejection hole of a nozzle so as to form an organic EL layer, and the liquid comprising an organic EL layer material, wherein:
- the inkjet method is of an electrostatic attraction type wherein the ejection hole has a diameter smaller than a diameter of the droplets and each of the droplets ejected is 1pl or less in amount; and the liquid has a volumetric concentration η (%) that is substantially $\beta \times t/(\alpha \times D)$, where α is a number of layers to be formed with the droplets repeatedly ejected on a same organic EL layer formation region, β is a value obtained from a ratio between the diameter of the droplets and a diameter of landed droplets in the organic EL layer formation region, D is the diameter of the droplets, and t is a thickness of the organic EL layer to be formed.

14. (Original) A method for producing a liquid crystal array having a pair of substrates facing each other and having a gap in which a liquid crystal is filled, the gap formed by a spacer provided between the substrates, at least one of the substrates having an aperture section, and the method comprising the steps of (i) ejecting droplets of a spacer material via an ejection hole of the nozzle by an inkjet method, and (ii) curing the spacer material so as to form the spacer, wherein:
- the ejection hole of the nozzle has a diameter smaller than a diameter of the droplets, the inkjet method is of electrostatic attraction type, and each of the droplets ejected via the nozzle is 1pl or less in amount.
15. (Original) A liquid crystal array as set forth in Claim 14, wherein:
- a material ejected from the nozzle has a viscosity of 30cP or more.
- 16 (Original). A method as set forth in Claim 14, wherein:
- that substrate on which the spacer is to be formed is configured such that a color filter is formed on a transparent substrate, the color filter colored with at least three colors or more.

17 (Original). A method as set forth in Claim 14, wherein:

that substrate on which the spacer is to be formed is
an active matrix substrate in which an active
element is provided per pixel.

18. (Currently Amended) The method as set forth in Claim 14, further
comprising ~~A method for producing a liquid crystal array~~
~~having a pair of substrates facing each other and having a~~
~~gap in which a liquid crystal is filled, the gap formed~~
~~by a spacer provided between the substrates, at least~~
~~one of the substrates having an aperture section, the~~
~~method comprising the steps of (i) ejecting droplets~~
~~of a spacer material via an ejection hole of the nozzle~~
~~by an inkjet method, and (ii) curing the spacer material~~
~~so as to form the spacer, the method comprising:~~

causing a tip portion of the nozzle to be in contact
with a spacer formation surface of a substrate;
applying a voltage to an electrode of the nozzle
being in contact with the spacer formation
surface, so as to shrink the spacer material; and
releasing the spacer material continuously, via the
nozzle under the voltage application as the nozzle
is moved away from the substrate, so as to form,
on the substrate, the spacer having a column-like
shape.

19. (Original) A method as set forth in Claim 18, wherein:
the ejection hole of the nozzle has a diameter of
8 μ m or less.
20. (Original) The method as set forth in Claim 18, wherein:
a material ejected from the nozzle has a viscosity of
30cP or more.
- 21 (Original). A method as set forth in Claim 18, wherein:
that substrate on which the spacer is to be formed is
configured such that a color filter is formed on a
transparent substrate, the color filter colored with
at least three colors or more.
22. (Original) A method as set forth in Claim 18, wherein:
that substrate-on which the spacer is to be formed
is an active matrix substrate in which an active
element is provided per pixel.

23. (Original) A method for producing a liquid crystal array having a pair of substrates facing each other and having a gap in which a liquid crystal is filled, the gap formed by a spacer provided between the substrates, at least one of the substrates having an aperture section, the method comprising: ejecting, by using an electrostatic attraction type inkjet apparatus, droplets of a liquid onto a spacer formation surface via a nozzle of the electrostatic attraction type inkjet apparatus so as to form the spacer, the nozzle having an ejection hole having a diameter smaller than a diameter of the droplets, the liquid comprising a solid spacer, and each of the droplets being 1pl or less in amount.
24. (Original) The method as set forth in Claim 23, wherein: a material ejected from the nozzle has a viscosity of 30cP or more.
25. (Original) A method as set forth in Claim 23, wherein: that substrate on which the spacer is to be formed is configured such that a color filter is formed on a transparent substrate, the color filter colored with at least three colors or more.

26. (Original) A method as set forth in Claim 23, wherein:
that substrate on which the spacer is to be formed
is an active matrix substrate in which an
active element is provided per pixel.
27. (Original) A method for producing a liquid crystal array having
a pair of substrates facing each other and having a gap
in which a liquid crystal is filled, the gap formed by a
spacer provided between the substrates, at least one
of the substrates having an aperture section, the method
comprising:
after providing an individual spacer on a spacer
providing surface,
positioning the individual spacer by hitting the
solid spacer with a droplet ejected via a
nozzle of an electrostatic attraction type
inkjet apparatus so as to move the solid
spacer, the nozzle having an ejection hole
having a diameter smaller than a diameter
of the droplet, and the droplet being 1pl
or less in amount.
28. (Original) A method as set forth in Claim 27, wherein:
a material ejected from the nozzle has a viscosity
of 30cP or more.

29. (Original) A method as set forth in Claim 27, wherein:
that substrate on which the spacer is to be formed
is configured such that a color filter is formed
on a transparent substrate, the color filter
colored with at least three colors or more.
30. (Original) A method as set forth in Claim 27, wherein:
that substrate on which the spacer is to be formed
is an active matrix substrate in which an
active element is provided per pixel.
31. (Previously Presented) A liquid crystal array produced by the
method as set forth in Claim 1.
32. (Original) A method for producing a color filter substrate, the
method comprising ejecting droplets of a liquid via an
ejection hole of a nozzle by an inkjet method so as to form
a color filter layer, and the liquid comprising a color filter
layer material, wherein:
an electrostatic attraction type inkjet apparatus is
used whose ejection hole is smaller than a
diameter of the droplets; and
the droplets are ejected from the nozzle of the
electrostatic attraction type inkjet apparatus
in such a manner that each of the droplets is
1pl or less in amount.

33. (Original) A method as set forth in Claim 32, wherein:
the liquid has a volumetric concentration calculated
from how many number of layers is to be formed
with the droplets repeatedly ejected onto a same
color filter layer formation region.
34. (Original) A method as set forth in Claim 32, wherein:
the liquid has a viscosity of 20cP or more.
35. (Currently Amended) A method for producing a color filter
substrate by an inkjet method to eject droplets of a
liquid via an ejection hole of a nozzle so as to form
a color filter layer, the liquid comprising a color
filter layer material, wherein:
an electrostatic attraction type inkjet apparatus
is used, the electrostatic attraction type
inkjet apparatus having the ejection hole
having a diameter smaller than a diameter
of the droplets and being for ejecting
droplets via its nozzle in such a manner
that each of the droplets is 1pl or less in
amount; and

the liquid has a volumetric concentration η (%) that is substantially $\beta \times t/(\alpha \times D)$, where α is a number of layers to be formed with the droplets repeatedly ejected on a same color filter layer formation region, β is a value obtained from a ratio between the diameter of the droplets and a diameter of landed droplets in the color filter layer formation region, D is the diameter of the droplets, and t is a thickness of the color filter layer to be formed.

36. (Original) A method as set forth in Claim 35, wherein:

the ejection hole of the electrostatic attraction type inkjet apparatus is smaller than the droplet in diameter.

37. (Original) A method as set forth in Claim 35, wherein:

the liquid has a viscosity of 20cP or more.

38. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 32.

39. Original) An apparatus for producing a color filter layer substrate, the apparatus adopting an inkjet method to eject droplets of a liquid via an ejection hole of a nozzle so as to form a color filter layer, and the liquid comprising a color filter layer material, wherein:
the ejection hole of the nozzle has a diameter smaller than a diameter of the droplets, the inkjet method is of electrostatic attraction type, and each of the droplets ejected via the nozzle is 1pl or less in amount.

40. (Currently Amended) An apparatus for producing a color filter substrate, the apparatus adopting an inkjet method to eject droplets of a liquid via an ejection hole of a nozzle so as to form a color filter layer, the liquid comprising a color filter-layer material, wherein:
the inkjet method is of an electrostatic attraction type, the ejection hole has a diameter smaller than a diameter of the droplets, and each of the droplets ejected is 1pl or less in amount; and

the liquid has a volumetric concentration η (%) that is substantially $\beta \times t / (\alpha \times D)$, where α is a number of layers to be formed with the droplets repeatedly ejected on a same color filter layer formation region, β is a value obtained from a ratio between the diameter of the droplets and a diameter of landed droplets in the color filter layer formation region, D is the diameter of the droplets, and t is a thickness of the color filter layer to be formed.

41. (Previously Presented) A method as set forth in Claim 3, wherein:
the organic EL layer has a charge transport layer.
42. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 2.
43. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 3.
44. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 4.

45. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 5.
46. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 6.
47. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 7.
48. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 8.
49. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 9.
50. (Previously Presented) An active matrix organic EL display element,
produced by using the method as set forth in Claim 10.
51. (Previously Presented) A liquid crystal array produced by the method
as set forth in Claim 18.
52. (Previously Presented) A liquid crystal array produced by the method
as set forth in Claim 23.
53. (Previously Presented) A liquid crystal array produced by the method
as set forth in Claim 27.

54. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 33.
55. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 34
56. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 35.
57. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 36.
58. (Previously Presented) A color filter substrate produced by a method as set forth in Claim 37.